

chain nodes :

19 20 21 22 23 24 25

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

chain bonds :

3-21 6-8 10-19 11-15 18-20 20-23 21-22 22-24 23-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17
17-18

exact/norm bonds :

3-21 18-20

exact bonds :

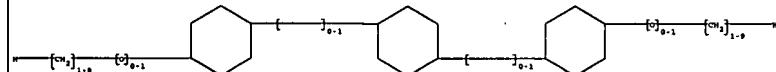
6-8 10-19 11-15 20-23 21-22 22-24 23-25

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17
17-18

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS
24:CLASS 25:CLASS



Untested
three rings

no F

no N

chain nodes :

19 20 25 26 27 28 29 30 39 40

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

chain bonds :

2-26 5-19 9-20 12-39 14-40 17-25 19-20 25-27 26-28 27-30 28-29 39-40

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17
17-18

exact/norm bonds :

1-2 1-6 2-3 2-26 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16
16-17 17-18 17-25

exact bonds :

5-19 9-20 12-39 14-40 19-20 25-27 26-28 27-30 28-29 39-40

G1:C,O

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS20:CLASS25:CLASS26:CLASS27:CLASS
28:CLASS29:CLASS30:CLASS39:CLASS40:CLASS

L20 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2007:534144 CAPLUS

DN 146:490596

TI Liquid crystal composition and liquid crystal display device
IN Yanai, Motoki; Kawashukuda, Hiroaki; Goto, Shuichi; Kubo, Yasuhiro
PA Chisso Corporation, Japan; Chisso Petrochemical Corporation
SO U.S. Pat. Appl. Publ., 29pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2007108409	A1	20070517	US 2006-598633	20061114
	JP 2007161995	A	20070628	JP 2006-290069	20061025
	EP 1788064	A1	20070523	EP 2006-255827	20061114
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
PRAI	JP 2005-331238	A	20051116		

L20 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2007:528096 CAPLUS

DN 146:510583

TI Nematic liquid crystal composition suitable for use in active matrix
liquid crystal display device
IN Saito, Masayuki; Yanai, Motoki; Goto, Shuichi
PA Chisso Corporation, Japan; Chisso Petrochemical Corporation
SO Eur. Pat. Appl., 32pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1785466	A1	20070516	EP 2006-255525	20061026
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
	JP 2007137921	A	20070607	JP 2005-329542	20051115
	US 2007108411	A1	20070517	US 2006-598707	20061114
PRAI	JP 2005-329542	A	20051115		

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1309051 CAPLUS

DN 146:52554

TI Liquid crystalline medium and liquid crystal display with new
1,2-difluoroethene compound
IN Wittek, Michael; Czanta, Markus; Hirschmann, Harald; Reiffenrath, Volker
PA Merck Patent G.m.b.H., Germany
SO Ger. Offen., 79pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 102006023898	A1	20061214	DE 2006-102006023898	20060522
	WO 2006133783	A1	20061221	WO 2006-EP4708	20060518
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,				

KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM

PRAI DE 2005-102005027171 IA 20050613

L20 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1249234 CAPLUS

DN 146:36018

TI Liquid crystalline medium showing improved high dielectric anisotropy,
nematic phase range, and birefringence and liquid crystal display

IN Czanta, Markus; Manabe, Atsutaka; Lietzau, Lars; Wittek, Michael

PA Merck Patent GmbH, Germany

SO Eur. Pat. Appl., 66pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1726633	A1	20061129	EP 2006-10227	20060518
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
	KR 2006121690	A	20061129	KR 2006-45599	20060522
	US 2006278850	A1	20061214	US 2006-439532	20060524
	CN 1869792	A	20061129	CN 2006-10084515	20060525
	JP 2006328399	A	20061207	JP 2006-144861	20060525
PRAI	EP 2005-11326	A	20050525		
	EP 2005-22352	A	20051013		

OS MARPAT 146:36018

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:767940 CAPLUS

DN 145:221423

TI Liquid crystal compositions containing chroman derivatives and displays
therewith

IN Sago, Hirotake; Fujita, Atsuko

PA Chisso Corp., Japan; Chisso Petrochemical Corporation

SO Jpn. Kokai Tokkyo Koho, 81 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006199941	A	20060803	JP 2005-362829	20051216
PRAI	JP 2004-367511	A	20041220		

L20 ANSWER 6 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:492661 CAPLUS

DN 144:478040

TI Liquid crystal mixture media with negative dielectric anisotropy for
electrooptical uses and liquid crystal displays

IN Ichinose, Hideo; Sung, Jung Hee; Nakajima, Shinji

PA Merck Patent Gesellschaft Mit Beschränkter Haftung, Germany

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2006131906	A	20060525	JP 2005-318834	20051101
PRAI EP 2004-25901	A	20041102		

L20 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2006:316877 CAPLUS
 DN 144:379228
 TI Liquid crystal composition and liquid crystal display element
 IN Tomi, Yoshitaka
 PA Japan
 SO U.S. Pat. Appl. Publ., 35 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2006071195	A1	20060406	US 2005-242663	20051003
WO 2006038443	A1	20060413	WO 2005-JP16931	20050914
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1808472	A1	20070718	EP 2005-783222	20050914
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 101031631	A	20070905	CN 2005-80032468	20050914
PRAI JP 2004-291571	A	20041004		
JP 2004-364424	A	20041216		
WO 2005-JP16931	W	20050914		

L20 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2000:286576 CAPLUS
 DN 132:355000
 TI Liquid crystal system as molecular machinery: investigation of dynamic impedance matching between molecular core and terminal groups using rotor-bearing model
 AU Xu, Jun; Okada, Hiroyuki; Onnagawa, Hiroyoshi; Sugimori, Shigeru; Toriyama, Kazuhisa
 CS Faculty of Engineering, Toyama University, Toyama, 930-8555, Japan
 SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2000), 39(4A), 1801-1807
 CODEN: JAPNDE; ISSN: 0021-4922
 PB Japanese Journal of Applied Physics
 DT Journal
 LA English
 RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1997:236796 CAPLUS

DN 126:285718
 TI Liquid crystals with a thiomethyl end group: lateral fluoro substituted
 4-(trans-4-(n-propyl)cyclohexylethyl)-4'-thiomethylbiphenyls and
 4-n-alkyl-4''-thiomethylterphenyls
 AU Goulding, Mark; Greenfield, Simon; Parri, Owain; Coates, David
 CS Liquid Crystal and Polymer Systems Research Dept., Merck Ltd., Dorset,
 BH15-1HX, UK
 SO Molecular Crystals and Liquid Crystals Science and Technology, Section A:
 Molecular Crystals and Liquid Crystals (1995), 265(Proceedings of the 15th
 International Liquid Crystal Conference, 1994, Pt. 5), 2593-2606
 CODEN: MCLCE9; ISSN: 1058-725X
 PB Gordon & Breach
 DT Journal
 LA English

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1996:209686 CAPLUS

DN 124:274629
 TI Three ring alkoxyphenyl liquid crystalline derivatives
 IN Coates, David; Goulding, Mark John; Marden, Shirley Ann
 PA Merck Patent GmbH, Germany
 SO Brit. UK Pat. Appl., 38 pp.
 CODEN: BAXXDU
 DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2290787	A	19960110	GB 1994-20920	19941017
	GB 2290787	B	19981028		
	JP 08020777	A	19960123	JP 1994-252443	19941018
PRAI	EP 1994-110193	A	19940630		

L20 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1995:677372 CAPLUS

DN 123:170537
 TI Terphenyl methacrylate derivatives and macromolecule-dispersing type
 liquid crystal display devices
 IN Yamada, Shuhei; Tanabe, Seiichi
 PA Seiko Epson Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 35 pp.
 CODEN: JKXXAF
 DT Patent

LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07101900	A	19950418	JP 1994-18649	19940215
	JP 3601069	B2	20041215		
	JP 2004157545	A	20040603	JP 2003-394339	20031125
	JP 3838366	B2	20061025		
PRAI	JP 1993-25571	A	19930215		
	JP 1993-106937	A	19930507		
	JP 1993-122631	A	19930525		
	JP 1993-141718	A	19930614		
	JP 1993-196332	A	19930806		
	JP 1993-198605	A	19930810		
	JP 1994-18649	A3	19940215		
OS	MARPAT 123:170537				

L20 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1995:358765 CAPLUS

DN 122:132780
 TI Method for preparation of biphenyl derivatives
 IN Takehara, Sadao; Oosawa, Masashi; Takatsu, Haruyoshi
 PA Dainippon Ink & Chemicals, Japan
 SO Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06239770	A	19940830	JP 1993-30386	19930219
PRAI	JP 1993-30386		19930219		
OS	CASREACT 122:132780; MARPAT 122:132780				

L20 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1992:436707 CAPLUS

DN 117:36707

TI Electrooptical liquid-crystal system

IN Coates, David; Marden, Shirley; Smith, Graham; Finkenzeller, Ulrich;

Reiffenrath, Volker; Hittich, Reinhard; Wilhelm, Stefan

PA Merck Patent G.m.b.H., Germany

SO PCT Int. Appl., 305 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9105029	A1	19910418	WO 1990-EP1649	19901001
	W: CA, JP, KR, SU, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
	DE 3936307	A1	19910502	DE 1989-3936307	19891101
	DE 4000471	A1	19910711	DE 1990-4000471	19900110
	DE 4000723	A1	19910718	DE 1990-4000723	19900112
	DE 4000723	B4	20051222		
	DE 4001023	A1	19910718	DE 1990-4001023	19900116
	DE 4001539	A1	19910725	DE 1990-4001539	19900119
	DE 4001540	A1	19910725	DE 1990-4001540	19900119
	DE 4001541	A1	19910725	DE 1990-4001541	19900119
	DE 4001683	A1	19910725	DE 1990-4001683	19900122
	DE 4001843	A1	19910725	DE 1990-4001843	19900123
	DE 4002146	A1	19910801	DE 1990-4002146	19900125
	DE 4005236	A1	19910822	DE 1990-4005236	19900220
	GB 2236759	A	19910417	GB 1990-20490	19900919
	GB 2236759	B	19930915		
	EP 452460	A1	19911023	EP 1990-916747	19901001
	EP 452460	B1	19950118		
	EP 452460	B2	19990811		
	R: CH, DE, DK, FR, GB, IT, LI, NL, SE				
	JP 04502781	T	19920521	JP 1990-515321	19901001
	JP 2962825	B2	19991012		
	JP 2001146589	A	20010529	JP 2000-305310	19901001
	CA 2042603	A1	19910403	CA 1990-2042603	19901002
	CN 1051926	A	19910605	CN 1990-109220	19901002
	DE 4034590	A1	19910502	DE 1990-4034590	19901031
	DE 4038767	A1	19910613	DE 1990-4038767	19901205
	DE 4100237	A1	19910711	DE 1991-4100237	19910107
	US 5344587	A	19940906	US 1991-687852	19910603
	US 5958290	A	19990928	US 1995-392682	19950223
	JP 11323341	A	19991126	JP 1999-98698	19990406
	JP 3133737	B2	20010213		
PRAI	GB 1989-22168	A	19891002		
	DE 1989-3936307	A	19891101		

DE	1989-3936308	A	19891101
DE	1989-3940788	A	19891209
DE	1990-4000470	A	19900110
DE	1990-4000471	A	19900110
DE	1990-4000723	A	19900112
DE	1990-4001023	A	19900116
DE	1990-4001539	A	19900119
DE	1990-4001540	A	19900119
DE	1990-4001541	A	19900119
DE	1990-4001683	A	19900122
DE	1990-4001843	A	19900123
DE	1990-4002146	A	19900125
GB	1990-1944	A	19900129
DE	1990-4005236	A	19900220
JP	1990-515321	A3	19901001
JP	1999-98698	A3	19901001
WO	1990-EP1649	W	19901001
US	1994-245265	B1	19940518

OS MARPAT 117:36707

L20 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1992:73194 CAPLUS

DN 116:73194

TI Liquid-crystal compositions containing anisotropic compounds

IN Tuong, Huynh Ba; Osman, Maged A.

PA Merck Patent G.m.b.H., Germany

SO U.S., 20 pp. Cont.-in-part of U.S. 4,808,333.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5047170	A	19910910	US 1988-289046	19881223
	JP 58121225	A	19830719	JP 1983-566	19830107
	JP 04011528	B	19920228		
	US 4808333	A	19890228	US 1985-758792	19850724
	US 5179101	A	19930112	US 1990-477490	19900209
	US 5338483	A	19940816	US 1993-6951	19930121
	US 5310501	A	19940510	US 1993-8888	19930125
PRAI	CH 1982-198	A	19820114		
	CH 1982-292	A	19820119		
	CH 1982-2725	A	19820504		
	US 1983-457567	B2	19830113		
	US 1985-758792	A1	19850724		
	US 1985-800920	A3	19851125		
	US 1990-477490	A1	19900209		
	US 1990-477719	B1	19900209		

OS MARPAT 116:73194

L20 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1991:571438 CAPLUS

DN 115:171438

TI The synthesis of several lateral difluoro-substituted 4,4"-dialkyl- and 4,4"-alkoxyalkylterphenyls and a rationalization of the effect of such substitution on mesophase type and transition temperatures

AU Gray, G. W.; Hird, M.; Toyne, K. J.

CS Sch. Chem., Univ. Hull, Hull, HU6 7RX, UK

SO Molecular Crystals and Liquid Crystals (1991), 204, 43-64

CODEN: MCLCA5; ISSN: 0026-8941

DT Journal

LA English

L20 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1990:641336 CAPLUS
DN 113:241336
TI Synthesis and properties of liquid crystalline materials with high optical anisotropy
AU Reiffenrath, V.; Finkenzeller, U.; Poetsch, E.; Rieger, B.; Coates, D.
CS Ind. Chem. Div., E. Merck, Darmstadt, D-6100, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (1990), 1257(Liq. Cryst. Disp. Appl.), 84-94
CODEN: PSISDG; ISSN: 0277-786X
DT Journal
LA English

L20 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1989:506356 CAPLUS

DN 111:106356

TI Anisotropic compounds having nematic phases and liquid-crystal mixtures containing them

IN Huynh-Ba, Tuong; Osman, Maged A.

PA Merck Patent G.m.b.H., Fed. Rep. Ger.

SO U.S., 19 pp. Cont.-in-part of U.S. Ser. No. 457,567, abandoned.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4808333	A	19890228	US 1985-758792	19850724
	JP 58121225	A	19830719	JP 1983-566	19830107
	JP 04011528	B	19920228		
	US 5227484	A	19930713	US 1985-800920	19851125
	US 5047170	A	19910910	US 1988-289046	19881223
	US 5179101	A	19930112	US 1990-477490	19900209
	US 5338483	A	19940816	US 1993-6951	19930121
	US 5310501	A	19940510	US 1993-8888	19930125
PRAI	CH 1982-198	A	19820114		
	CH 1982-292	A	19820119		
	CH 1982-2725	A	19820504		
	US 1983-457567	A2	19830113		
	US 1985-758792	A1	19850724		
	US 1985-800920	A3	19851125		
	US 1990-477490	A1	19900209		
	US 1990-477719	B1	19900209		
OS	MARPAT 111:106356				